

CLAIMS

1. A powder metal composition for producing powder metal components comprising a Co-based pre-alloyed powder, with irregularly shaped particles comprising at least 15% by weight Cr and less than 0.3% by weight C, admixed with graphite.

2. A powder metal composition according to claim 1 further comprising at least one element selected from the group consisting of W and Mo.

3. A powder metal composition according to claim 1 or 2, further comprising at least one alloying element selected from Ni, Fe, Si, Mn, V and B.

4. A powder metal composition according to any one of the claims 1-3, wherein the content of C in the pre-alloyed powder preferably is less than 0.1% by weight, and most preferably less than 0.05% by weight.

5. A powder metal composition according to any one of the above claims comprising: 15-35% by weight Cr, 0-20% by weight W, 0-25% by weight Ni, 0-5% by weight Si, 0-5% by weight Fe, 0-10% by weight Mo, the balance being Co.

6. A powder metal composition according to any one of the above claims, wherein the content of admixed graphite is preferably at least 0.5% by weight, more preferably at least 0.7% by weight.

7. A composition according to any one of the above claims further comprising one or more additives selected from the group consisting of lubricants, processing aids alloying elements and binders.

8. A method for producing a component of a Co-based alloy with high green strength and high green density comprising the steps:

a) providing a powder metal composition comprising a Co-based pre-alloyed powder, with irregularly shaped particles comprising at least 15% by weight Cr and less than 0.3% by weight C, admixed with graphite;

b) compacting the composition in a die at a pressure of at least 400 MPa to a component of desired shape.

9. Method according to claim 8, wherein the pre-alloyed powder contains less than 0.1% by weight C,
5 preferably less than 0.05% by weight C.

10. Method according to claims 8 or 9, wherein the content of admixed graphite is at least 0.5% by weight, preferably at least 0.7% by weight.

11. Method for producing a sintered component of a
10 Co-based powder metal composition comprising, in addition to step a) and b) according to claim 8 the step:

c) sintering the component.

12. Method according to claim 11, wherein the sintering is performed at a temperature of at least
15 1080°C in a protective atmosphere or vacuum.

13. A Co-based pre-alloyed powder with irregularly shaped particles comprising at least 15% by weight Cr and less than 0.3% by weight C.